

**Case 3575*****Haltica undulata* Kutschera, 1860 (currently *Phyllotreta undulata*, Insecta, Coleoptera, CHRYSOMELIDAE): proposed precedence over *Haltica bivittata* Waterhouse, 1838 (currently *Phyllotreta bivittata*)**

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**Abstract.** The purpose of this application, under Articles 23.9.3 and 81 of the Code, is to conserve the name *Phyllotreta undulata* (Kutschera, 1860), for a common and widespread flea-beetle species (CHRYSOMELIDAE, GALERUCINAE), which is also a crop pest, by giving it precedence over the unused older name *P. bivittata* (Waterhouse, 1838), whenever these names are considered to be synonyms.

**Keywords.** Nomenclature; taxonomy; Coleoptera; CHRYSOMELIDAE; GALERUCINAE; *Phyllotreta*; *P. undulata*; Eurasia; North America; Australia; Pacific region.

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1. In 1836 Charles Darwin collected beetles at the fledgling colony of King George Sound, Western Australia (founded 1826). On his return to England, the flea-beetles (CHRYSOMELIDAE, GALERUCINAE, ALTICINI) were described by George Waterhouse at the Natural History Museum, London (Waterhouse, 1838). One of these species was *Haltica bivittata* Waterhouse, 1838 (p. 133), later placed in *Phyllotreta* Chevrolat, 1836 (Masters, 1887), but without examination by Masters of the original material.

2. The species represented by the name *Phyllotreta bivittata* has rarely been referred to. Blackburn (1890) compared its description with *Phyllotreta australis* Blackburn, 1890. Heikertinger & Csiki, 1940, catalogued *P. bivittata* in a work which included taxonomic decisions and references to the biology and biogeography of species. Heikertinger (1941) examined the type material of *P. bivittata* and compared this species with *P. vilis* Weise, 1888. In this work, the last taxonomic work to treat *P. bivittata*, Heikertinger regarded it as a valid species endemic to Australia. Otherwise, since 1838 the name has been an infrequent checklist entry as a valid species name (Masters, 1887; Reid, 2008). *Phyllotreta bivittata* was not included in Blackburn's revision of the Australian ALTICINI, which remains the only revision of this tribe in Australia (Blackburn, 1896).

3. Waterhouse's 3 syntypes of *Haltica bivittata*, in the Natural History Museum, London, have been examined by CR and RB and a male dissected to examine the

genitalia, structurally diagnostic in the genus *Phyllotreta* (Mohr, 1966). The syntypes all have Darwin's coded collecting labels, plus printed labels indicating they were collected by Darwin at King George Sound. This type material is morphologically within the range of variation known for the species currently known as *Phyllotreta undulata* (Kutschera, 1860), with identical male genitalia, and these two names are evidently subjective synonyms.

4. *Haltica undulata* was described by Kutschera in 1860 (p. 301) for a European species of the tribe ALTICINI, subfamily GALERUCINAE, family CHRYSOMELIDAE. Kutschera described *undulata* in the genus *Haltica*, in his fifth group of that genus, which he noted was equivalent to the available generic name *Phyllotreta* Chevrolat, 1836 ['V. Gruppe (*Phyllotreta* Chevrol. Dej. Cat.)']. Kutschera explicitly used the word Gruppe [group] for this taxonomic concept, not subgenus, or genus, and we consider that its treatment as a species-group within a genus was an act of synonymy.

5. The first unequivocal transfer of *Haltica undulata* to *Phyllotreta* Chevrolat, 1836, was by Allard (1866) and it has since remained in this genus as *Phyllotreta undulata* (Kutschera, 1860). Older names exist for this species, but they are junior homonyms and not available (as listed in catalogues: Heikertinger & Csiki, 1940; Gruev & Döberl, 1997). There are also two available names describing colour variations, which postdate *P. undulata* (Heikertinger & Csiki, 1940; Gruev & Döberl, 1997; Döberl, 2010).

6. *Phyllotreta undulata* belongs to a group of small, similarly coloured, species which are relatively difficult to distinguish and are endemic to Eurasia. However, numerous regional faunas adequately separate *P. undulata* from its relatives on external characters and diagnostic male genitalia (Heikertinger, 1941; Mohr, 1966; Medvedev, 1982; Doguet, 1994; Warchalowski, 1995; Bienkowski, 2004; Döberl, 2010), which are identical to those of *P. bivittata*.

7. The name *Phyllotreta undulata* is well-known throughout Europe, stable and associated with a large body of literature concerning its distribution, biology, pest status on the plant family BRASSICACEAE, and associated microfauna. Heikertinger & Csiki, 1940, list 31 taxonomic and biogeographic references and approximately 50 articles on biology of *P. undulata*; more recent references include: taxonomy and distribution (Mohr, 1966; Medvedev, 1982; Doguet, 1994; Warchalowski, 1995; Gruev & Döberl, 1997; Riley et al., 2003; Bienkowski 2004; Döberl, 2010; Borowiec, 2011); biology (Steinhausen 1978; Vig 2003; Clark et al., 2004 [23 papers cited for hostplant]); pest status (Augustin et al., 1986; Ekbohm, 1995; Weiss, 2003); associated pathogens (Yaman et al., 2009). A search of the abstracting journal Zoological Record in January 2012 revealed that at least 25 works, by more than 15 authors, have been published in the last 25 years with the name *Phyllotreta undulata* in the title or abstract.

8. *Phyllotreta undulata* has been accidentally transported to other biogeographic regions by humans, including North America, Australia and the West Pacific (Samuelson, 1973; Riley et al., 2003). Several of these introductions were not originally recognised as such. Thus *Altica strigula* Montrouzier, 1864 (New Caledonia), *Phyllotreta australis* Blackburn, 1890 (Australia), *Phyllotreta vittigera* Broun, 1893 (New Zealand), and *Phyllotreta blackburni* Bryant, 1925 (Fiji), are now recognised as junior synonyms of *Phyllotreta undulata* (Samuelson, 1973), although

*strigula* has also, erroneously, been placed as a synonym of another valid species, *Phyllotreta striolata* (Döberl, 2010).

9. The subjective senior synonym *P. bivittata* has, with three exceptions, existed for the last 173 years only as a catalogue entry in the Australian fauna, whereas its junior synonym is a well-established name throughout much of the world, with an extensive associated literature. Replacement of *Phyllotreta undulata* with *Phyllotreta bivittata* would be a considerable inconvenience to agriculturalists, horticulturalists, ecologists and other biologists, principally in Europe, where *bivittata* is an unknown name.

10. The junior synonym, *P. undulata*, has been used as the presumed valid name in at least 25 works by at least 10 authors in the last 50 years, meeting the requirements of Article 23.9.1.2, however Article 23.9.1.1 is not met: the senior synonym, *P. bivittata*, has been used as a valid name since 1899 (by Heikertinger & Csiki, 1940; Heikertinger 1941), and this use is more than a mere listing in an abstracting publication or other index or list of names (Article 23.9.6). Therefore, in accordance with Article 23.9.3 of the Code, this case is referred to the Commission for a ruling under Article 81.2.3.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the name *undulata* Kutschera, 1860, as published in the binomen *Haltica undulata*, precedence over the name *bivittata* Waterhouse, 1838, as published in the binomen *Haltica bivittata*, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Specific Names in Zoology the name *undulata* Kutschera, 1860, as published in the binomen *Haltica undulata*, with the endorsement that it is to be given precedence over the name *bivittata* Waterhouse, 1838, as published in the binomen *Haltica bivittata*, whenever the two are considered to be synonyms;
- (3) to place on the Official List of Specific Names in Zoology the name *bivittata* Waterhouse, 1838, as published in the binomen *Haltica bivittata*, with the endorsement that it is not to be given priority over the name *undulata* Kutschera, 1860, as published in the binomen *Haltica undulata*, whenever the two are considered to be synonyms.

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